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Neonatal heart tumor: not a bad outcome

Tumor cardíaco neonatal: nem sempre mau prognóstico

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Keypoints

What is known
- Cardiac tumors are rare in the pediatric population.
- Symptoms can range from heart murmurs to death.

What is added
- Echocardiograms are often performed in brief, resolved, unexplained events, but an MRI is important in the characterization of myocardial masses.
- Differentiating between benign and malignant masses through diagnostic imaging can prevent a potential heart intervention.

This article aims to present the case of a four-day-old female newborn brought to the emergency room.

The pregnancy was unremarkable. The birth was a normal delivery at 38 weeks, and she was discharged after three days.

According to the mother, before feeding the baby, she choked with secretions discharged through the mouth and nose. The mother gave sharp blows between the scapulae, but was unable to trigger crying, describing hypertonia and cyanosis. The episode resolved spontaneously, with overall improvement.

She was admitted to the Neonatal Intensive Care Unit. Her physical examination was normal, including no cutaneous alterations. A transthoracic echocardiogram was performed and found an asymmetric hypertrophic cardiomyopathy versus a single fibroma in the septum, with no other abnormalities (Figs. 1 and 2). Her electrocardiogram and 24-hour electrocardiographic monitoring revealed a sinus arrhythmia. She was then

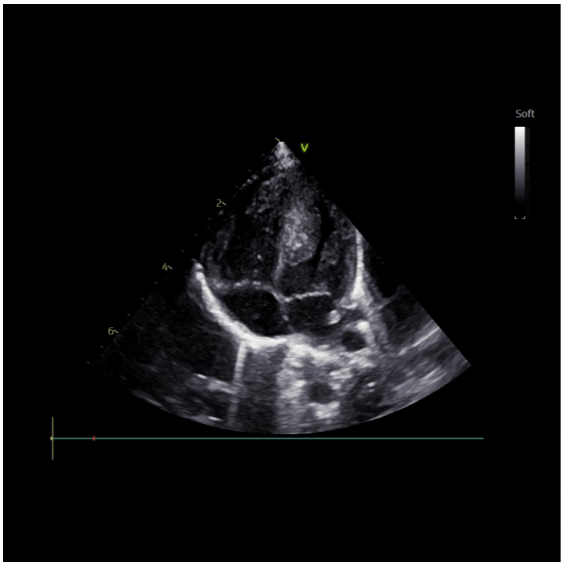

Figure 1. Apical four chamber view.

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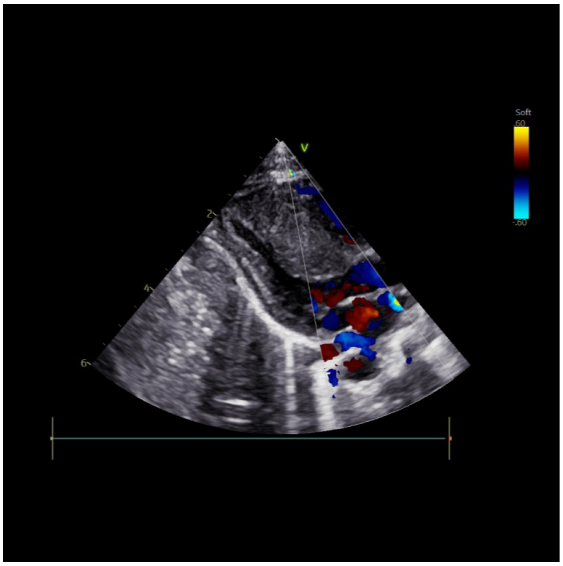

Figure 2. Parasternal long axis view.

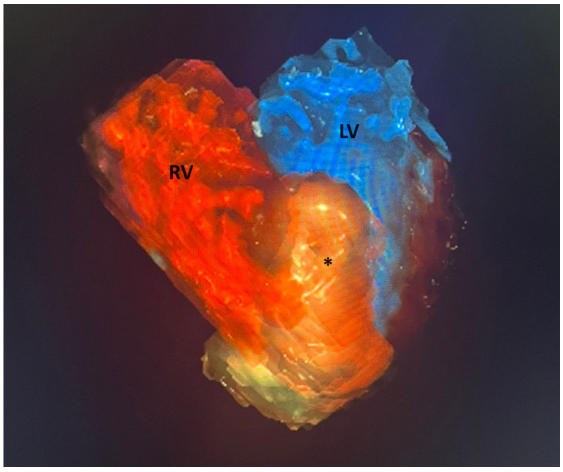

Figure 3. 3D MRI reconstruction. *Fibroma. RV: right ventricule; LV: left ventricule.

medicated with propranolol one mg/kg/dose to decrease her heart rate, increasing the duration of the diastole and reducing the ventricular outflow tract obstruction caused by the mass, as well as decreasing myocardial oxygen demand and ventricular wall stress.

The etiological study did not reveal any abnormalities, including ophthalmological examination and the hypertrophic cardiomyopathy genetic panel. Her cardiac magnetic resonance imaging confirmed a fibroma in the septum (Figs. 3 and 4).

She is currently one year old, medicated with propranolol and growing according to her percentiles. She

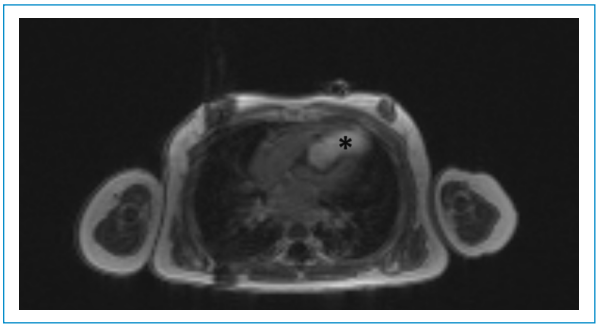

Figure 4. T1 TSE dark-fluid axial cut. *Fibroma.

is being followed up in Pediatric Cardiology, Neonatology, and Genetics outpatient consultations.

Cardiac tumors are rare in the pediatric population, most being benign[1-4]. In neonates, presenting symptoms are usually cyanosis, heart murmurs, arrhythmia, and cardiac failure[1,2].

Fibromas are the second most common type of heart tumor[1-3]. They are benign and are often found in the left ventricle or the septum[1,3]. Echocardiography may reveal a heterogeneous mass, which may condition various arrhythmias[1-3]. Cardiac masses can cause intracardiac flow obstruction, heart valve insufficiency, arrhythmia, heart failure, hydrops fetalis, or even death[1-3].

Symptomatic treatment or surgery should be considered on a case-by-case basis[1,3]. Therefore, regular echocardiograms and specialized follow-up are essential to control heart function and to determine the course of treatment[2,3].

Author contributions

M. João Pereira and L. Gaspar participated in the study conception or design. MJP participated in acquisition of data. M. João Pereira participated in the analysis or interpretation of data. M. João Pereira and L. Gaspar participated in the drafting of the manuscript. All authors participated in the critical revision of the manuscript. All authors approved the final manuscript and are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Conflicts of interest

None.

Ethical considerations

Protection of humans and animals. The authors declare that the procedures followed complied with the ethical standards of the responsible human experimentation committee and adhered to the World Medical Association and the Declaration of Helsinki. The procedures were approved by the institutional Ethics Committee.

Confidentiality, informed consent, and ethical approval. The authors have followed their institution's confidentiality protocols, obtained informed consent from patients, and received approval from the Ethics Committee. The SAGER guidelines were followed according to the nature of the study.

Declaration on the use of artificial intelligence. The authors declare that no generative artificial intelligence was used in the writing of this manuscript.

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